**Manchester Institute of Biotechnology - Risk Assessment**



| **Date:** January 2015 | **Assessed by**: Sandra Kennedy | **Validated by**: Tanya Aspinall | **Location**: MIB  |  | **Review date:** 2016 |
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| **Task** Use of Electrophoresis Equipment.Electrophoresis of DNA and proteins using agarose or polyacrylamide gels as the supporting medium. The process requires pouring gels in vertical or horizontal format and thereafter subjecting to strong electrical fields |

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| **Activity**  | **Hazard**  | **Person(s) in dange**r  | **Existing measures to control risk**  | **Risk rating**  | **Result**  |
| Use of Electrophoresis Equipment. | Boiling agarose – risk of burns | Staff  | All users are fully trained in all aspects of this procedure and supervised until competent (including how to boil agarose in microwave)The following items of PPE must be worn: Howie-style laboratory coat, BS EN374 compliant gloves (nitrile) for handling chemicals, and BS EN166 compliant eye protection (chemical splash proof safety glasses). A selection of safety glasses and goggles are available from MIB Stores; users are advised to visit Stores and select eye protection which fits well and is comfortable to use. Regular lab inspections monitor the wearing of PPE; users found not to be wearing PPE when the risk assessment states that it must be worn will be subject to the MIB compliance policy.BS EN 407 compliant thermal gloves must be used for handling hot glassware.  | low | A |
|  | Broken glass – risk of cuts from broken glass plates | Staff | All glass plates are regularly checked for damage, and broken/cracked/chipped plates are discarded into the dedicated glass bins for disposal. | low | A |
|  | Chemical hazard – from ingesting acrylamide (inhalation or touch)Ethidium Bromide (EtBr) | Staff | Refer to the COSHH assessment for each hazardous substance, and ensure all control measures are followedA COSHH assessment (including information on what to do in case of accident) has been carried out for acrylamide and EtBr, and must be read and signed before the work begins.Acrylamide is a neurotoxin; it is more hazardous in powder form, so acrylamide solutions are used wherever possible.Agarose containing EtBr must not be melted/heated in a microwave as it will result in the production of bromine gas. EtBr should only be added to pre-molten agarose in a hood.The following items of PPE must be worn: Howie-style laboratory coat, BS EN374 compliant gloves (nitrile) for handling chemicals, and BS EN166 compliant eye protection (chemical splash proof safety glasses). BS EN 407 compliant thermal gloves must be used for handling hot glassware.  | low | A |
|  | Electrical hazard - risk of electric shock | Staff  | All equipment and power supplies are safety tested and regularly maintained Buffers and other solutions are not stored above power supplies. | low | A |
|  | Trailing electrical leads – risk of slips/trips | Staff and others in lab | All excess leads are coiled and taped to minimise the risk of slip/trips. | low | A |

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| **Authorisation by PI** **I confirm that I have considered and understand the experiment and the associated hazards. I am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to acceptable levels.** **Print name: Signed:****Date:** |

**Declaration by researcher**

**I confirm that I have read this Risk Assessment and that I understand the hazards and risks involved and will follow all of the safety procedures stated. Where PPE has been identified as a control measure, I will ensure that it is worn.**

**Declaration by PI**

**I confirm that the researcher who has signed below is competent to undertake the work. My counter-signature indicates that I am happy for the work to proceed.**

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| **Name (please print)** | **Signed** | **PI countersignature** | **Date** |
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